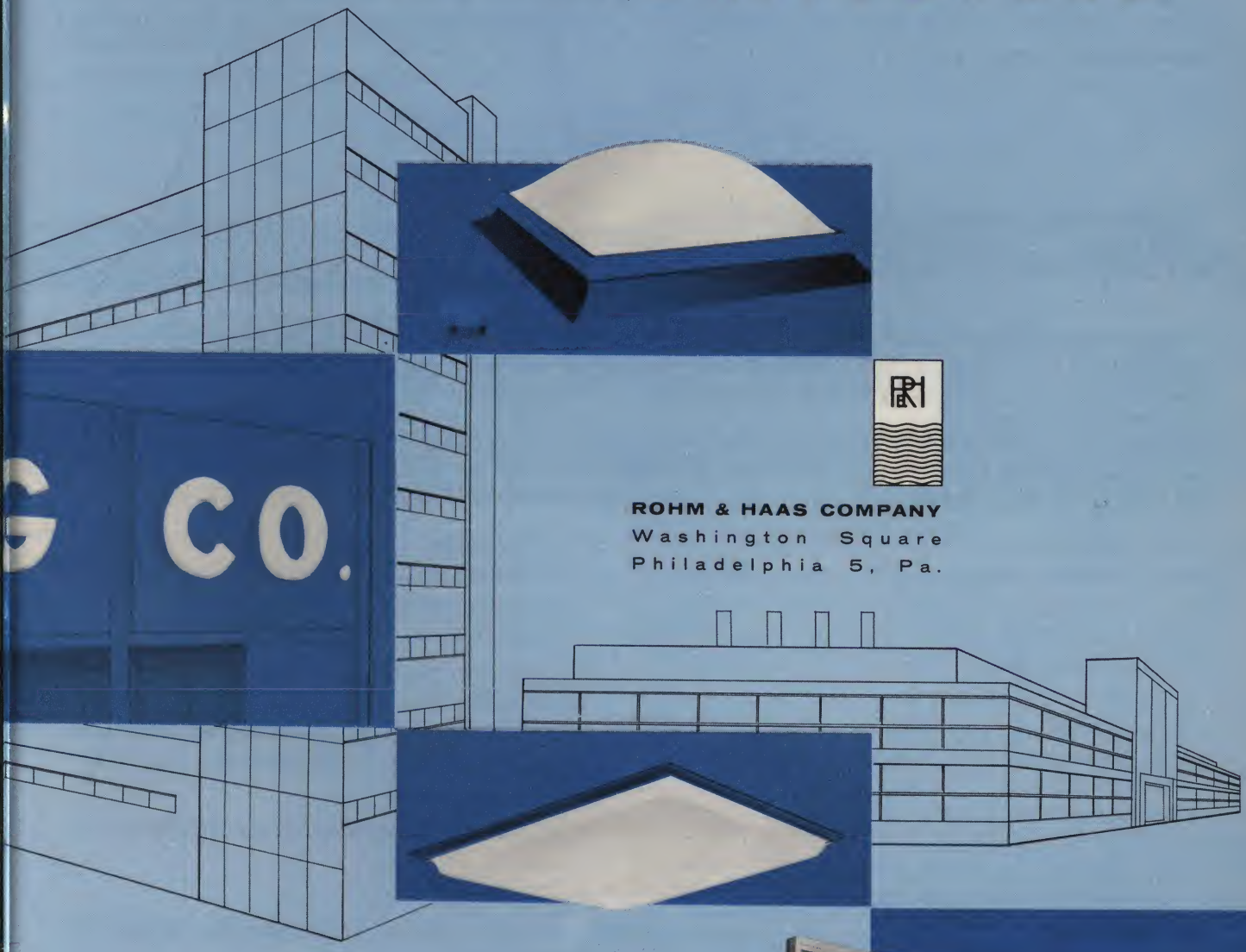
ACRYLIC PLASTIC

PLEXIGLAS

IN ARCHITECTURE



ROHM & HAAS COMPANY
Washington Square
Philadelphia 5, Pa.

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PLEXIGLAS IN ARCHITECTURE

The vision and ingenuity of the architectural profession in accepting new material and finding proper applications for it have resulted in the widespread use of Plexiglas acrylic plastic.

Plexiglas is no longer a new material. For more than ten years, architects have used it under varying conditions, including outdoor exposure, that have proven the stability of this plastic. Today, as a basic component of many standard building products and in custom installations, Plexiglas is contributing beauty, utility, and safety in lighting, skylighting, window glazing, signs and many other fields of application.

This brochure describes the characteristics of Plexiglas as an architectural material, its uses, the various types of Plexiglas that are available, and presents information required for proper specifications, designs and assemblies.

ARCHITECTURAL APPLICATIONS

Rohm & Haas Company manufactures Plexiglas acrylic plastic sheets and molding powders. These are formed, fabricated, molded and assembled by other manufacturers for architectural use.

Architectural applications for Plexiglas are in two categories—Standard Building Products, and Custom Designed Applications.

STANDARD BUILDING PRODUCTS

Corrugated sheets
Daylight louver panels
Directional signs
Dome skylights
Edge-lighted sculpture
Flat sheets
Formed panels
Lighted letter signs
Lighting equipment
Luminous ceilings
Shower enclosures
Store display fixtures: display stands, millinery and hat trees, counter dividers, drawer trays
Three-dimensional formed letters

The names of manufacturers, fabricators, and dealers handling specific types of standard Plexiglas products for architectural uses can be obtained from Rohm & Haas Company.

CUSTOM DESIGNED APPLICATIONS

Architectural signs
Custom display fixtures: display envelopes, show cases, tiered display shelves, wall display boxes
Formed windows
Hardware: door knobs, kick plates, light switch plates, splash plates, towel rings and racks
Interior decorative pieces: bowls, dishes, lamp bases, vases, interior-carved panels, embedded objets d'art
Luminous store fronts
Valance and soffit lighting shields and diffusers
Partitions
Spandrel panels
Miscellaneous: models, blueprint covers, display cases, exhibit housings

Custom designed Plexiglas products can be ordered from custom fabricators and sign manufacturers. Names of sources are available on request.

TYPES OF PLEXIGLAS SHEETS

There are five types of Plexiglas sheets for architectural use:

1. **Plexiglas Colorless**
2. **Plexiglas Colored**
3. **Plexiglas Patterned**
4. **Plexiglas 5009 Flame-Resistant**
5. **Plexiglas II UF (Ultra-violet absorbing at 375 millimicrons)**

See pages 4-5 for properties and sizes.

All five types of Plexiglas can be specified in a wide variety of thicknesses and sheet sizes. Selection of the proper type, color, thickness and sheet size for a specific architectural application is important. Manufacturers using Plexiglas in standard building products have carefully considered these factors.

ARCHITECTURAL CHARACTERISTICS

1 transparency

In colorless form, Plexiglas is as transparent as the finest optical glass. It is also manufactured in a complete range of transparent and translucent colors.

2 outdoor stability

Plexiglas is an acrylic plastic, with time-proved ability to withstand exposure to weather and to give long trouble-free service in outdoor applications. Many carefully developed and tested Plexiglas colors show no appreciable change over long periods of exposure to sunlight.

3 light transmission

Colorless Plexiglas transmits a total of 92% white light. White translucent Plexiglas sheets, commonly used as diffusers, have light transmittance values up to 65%. Used as the diffusing material on well designed lighting fixtures with high-reflectance surfaces, Plexiglas has up to 90% transmission efficiency.

4 light diffusion

White translucent sheets diffuse light evenly in all directions. With proper lamp spacing, this results in excellent uniformity of brightness across the visible surfaces of back-lighted Plexiglas sheets.

5 luminous color effects

The wide range of outdoor-stable translucent colors in which Plexiglas is available adds to its effectiveness as a sign material. Back-lighted Plexiglas sign faces become large multi-colored, luminous, surfaces at night.

6 glare reduction

Various transparent Plexiglas colors control daylight by reducing glare. Blue, green and smoky gray colors are excellent for window glazing where sky glare is a problem.

7 breakage resistance, light weight

Although less than one-half the weight of glass, Plexiglas has six to seventeen times greater resistance to breakage from impact, in thicknesses of 1/8" to 1/4".

8 versatility

Plexiglas can be formed easily to almost any shape or curve, when heated to a pliable state. Using recommended tools, it can be sawed, drilled and machined like wood or soft metals.

1. PLEXIGLAS COLORLESS SHEET

PROPERTIES

Specific Gravity	1.19
Tensile Strength (psi)	10,500
Flexural Strength (psi)	16,000
Compressive Strength (psi)	18,000
Modulus of Elasticity (psi)	450,000
Maximum Service Temperature (continuous) (°F)	180-200
Coefficient of Thermal Expansion (in./in.°F)	.00005
Total White Light Transmittance (%)	92
Refractive Index	1.49

dimensional stability. Plexiglas has outstanding dimensional stability and resistance to cold flow or creep. It does not become brittle at low temperatures.

u-factor. .187″-thick Plexiglas = 1.09 B.T.U.'s per hour per square foot per degree F. with 15 mph 0°F. air on one side and 0 mph 70°F. air on the other side. .187″-thick glass = 1.23 B.T.U.'s.

electrical properties. Plexiglas is an excellent insulator. Its properties are not affected by age, weather or immersion in water.

fire resistance. Plexiglas is classified as a "slow burning plastic" material by Underwriters' Laboratories, Inc., Re-Examination Service File MH-4833.

thicknesses	standard sizes											
	36″ x 60″	48″ x 72″	48″ x 96″	53″ x 80″	53″ x 90″	60″ x 72″	60″ x 84″	60″ x 96″	60″ x 102″	67″ x 79″	67″ x 102″	72″ x 72″
.060″	X	X										
.080″	X	X										
.100″	X	X										
.125″	X	X	X	X	X	X	X	X	X	X	X	X
.187″	X	X	X	X	X	X	X	X	X	X	X	X
.250″	X	X	X	X	X	X	X	X	X	X	X	X

size 60″ x 72″	size 48″ x 60″
.312″	1.250″
.375″	1.500″
.500″	1.750″
.625″	2.000″
.750″	2.250″
.875″	2.500″
1.000″	3.000″

2. PLEXIGLAS COLORED SHEET

PROPERTIES

Properties of colored sheets, except optical, are substantially the same as for Plexiglas Colorless sheet.

The following list of standard colors includes light transmission values, except for denser colors. When dense-color Plexiglas is formed into letters, the stretching of the material increases the light transmission to a considerable degree.

thicknesses	standard sizes								
	36″ x 60″	36″ x 72″	42″ x 84″	48″ x 48″	48″ x 60″	48″ x 72″	60″ x 72″	60″ x 96″	72″ x 72″
.060″	X*								
.080″	X*	X*							
.100″	X*	X*							
.125″	X	X**	X	X**	X**	X	X***		
.187″	X		X	X**		X	X***	X***	X***
.250″			X			X**			

*In white translucent W-2447 and W-7420 only.

**In white translucent W-2447 only.

***In white translucent W-7328 only.

thicknesses	non-standard sizes																	
	36″ x 60″	36″ x 72″	42″ x 84″	48″ x 48″	48″ x 60″	48″ x 72″	48″ x 96″	50″ x 80″	52″ x 52″	52″ x 104″	53″ x 80″	53″ x 90″	60″ x 60″	60″ x 72″	60″ x 96″	60″ x 102″	67″ x 79″	67″ x 102″	72″ x 72″
.060″	X																	
.080″	X			X														
.100″	X			X														
.125″		X	X	X	X		X	X		X		X	X					
.187″		X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X
.250″	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

STANDARD COLORS*

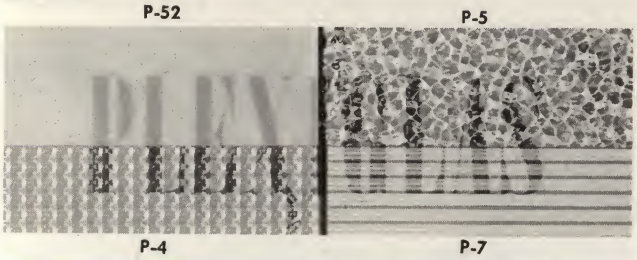
color no.	description	% luminous transmittance**
transparent		
2045	dark blue transparent	8
2064	gray transparent	27
2069	blue transparent	54
2074	gray transparent	14
2082	green transparent	69
2083	medium blue transparent	19
2092	dark green transparent	24
2111	green transparent	78
2208	yellow transparent	81
2444	dark red transparent	8
2451	amber transparent	51
translucent		
W2067	white translucent	67 (.125″ thick)
W2159	white translucent	59 (.125″ thick)
W2254	white translucent	54 (.125″ thick)
W2447	white translucent	47 (.125″ thick)
W7138	white translucent	38 (.125″ thick)
W7328	white translucent	28 (.125″ thick)
W7420	white translucent	20 (.125″ thick)
2016	yellow translucent	20
2030	green translucent	8
2037	yellow translucent	26
2039	red translucent	0
2047	green translucent	35
2050	blue translucent	2
2051	blue translucent	19
2108	green translucent	2
2119	orange translucent	7
2146	ivory translucent	30
2157	red translucent	2
2199	beige translucent	7
2200	cool white translucent	24
2201	blue translucent	2
2202	green translucent	6
2203	chartreuse translucent	16
2204	coral translucent	4
2415	red translucent	10
fluorescent		
2085	red daylight fluorescent	9
2086	yellow daylight fluorescent	9
2154	green daylight fluorescent	91
opaque		
2025	black opaque	0

*Outdoor Stability Ratings available on request.

**C.I.E. Illuminant C, indicative of north daylight.

3. PLEXIGLAS PATTERNED COLORLESS SHEET

Patterned Plexiglas sheets are supplied only as colorless material.



standard patterns	description
P-4	pyramids, approx. 64/sq. in.
P-5	rippled design
P-7*	ribbed, approx. 8 lines/in.
P-52	matte finish

*Pattern runs parallel to long dimension of the sheet.

standard sheets	standard thicknesses
36" x 48" 36" x 60" (P-52 only)	.125" and .250"

4. PLEXIGLAS 5009 FLAME-RESISTANT

Plexiglas 5009 is an acrylic sheet with a burning rate which, under standard ASTM test conditions, classifies it as self-extinguishing. It is especially suitable for large area indoor lighting such as luminous ceilings where the degree of flammability may be important. It is available in white translucent color only (Color No. W-2160 in .080", .100", .125" thicknesses; Color No. W-2353 in .100", .125", .187" thicknesses; Color No. W-2647 in .125", .187", .250" thicknesses and Color No. W-2340 in .375" and .500" thicknesses only.)

The flame-resistant advantage of Plexiglas 5009 is gained at the expense of certain other properties. Plexiglas 5009 has lower tensile, flexural and compressive strengths than the Plexiglas sheets previously described. It also has lower heat resistance and notably less weather resistance. It is not recommended for outdoor use.

Plexiglas 5009 has excellent resistance to the effects of fluorescent light and, therefore, is recommended for indoor lighting applications.

standard sheets			standard thicknesses
36" x 48"	48" x 48"*		
36" x 60"	48" x 60"*	36" x 72"*	.080", .100", .125"
40" x 50"	*.125" thickness only		

5. PLEXIGLAS II UF

Plexiglas II UF is a transparent, colorless material developed to absorb radiation in the ultraviolet range just below the visible spectrum, for prevention of damage to art objects. The material cuts off ultra-violet at about 375 millimicrons.

Plexiglas II UF is recommended for use as a filter for fluorescent-lighted display cases and similar applications, where art objects are exhibited. Through the use of this material, the expected life of art objects can be increased by a factor of as much as five.

standard sheets	standard thicknesses
all standard Plexiglas colorless sheet sizes.	.060", .080", .100", .125", .150", .187", .250"

FABRICATION INFORMATION

Detailed fabricating instructions are available. See publications listed on back cover.

cutting. Ordinary band, circular or jig saws are used to cut Plexiglas. Circular blades should be 8"-10" diameter, operating at 3400 rpm. Blades should be 3/32"-1/8" thick with 6-8 teeth per inch, alternately set and filed radially.

drilling. Best results are achieved by repointing the twist drills commonly used for metals. The point should have the cutting edge ground to zero rake angle, to give a scraping action. The included angle of the point should be 55°-60°. Moderate speeds and light pressure should be used.

cementing. Cements for Plexiglas are solvents that soften the plastic surface. When pressed together, the softened surfaces intermingle and, as the solvent evaporates, a hard joint results. Rohm & Haas Company Cement II should be used with Plexiglas.

forming. Plexiglas sheet becomes soft and pliable when heated to 275°-320°F. It can then be formed to almost any shape, which is retained when the material cools.

forms. Since the forms are not subjected to great pressure, they can be made of plaster, wood, plywood, impregnated wood, or metal. As a result, custom formed shapes can be obtained economically in relatively low quantities.

shapes. For simple shapes, a heated Plexiglas sheet is placed on a form and held at the edges until cool. More deeply formed parts can be made by stretching the hot plastic over a form and clamping the sheet at the edges. Many three-dimensional shapes are made by the use of air-pressure differentials (vacuum or blow forming).

cold forming. Plexiglas sheets may be cold-formed—sprung into a curved frame without heating—if the radius of curvature is at least 180 times the thickness of the sheet. Cold forming to a greater degree is not recommended.

In lighting applications, Plexiglas is generally used as a formed, white translucent, diffusing panel. Because the material can be formed easily with low-cost dies, it has become widely used in the newest trend in lighting—large area illumination.

Forming adds great rigidity to Plexiglas. This makes it possible to use square, rectangular and oval diffusing panels of up to 25 square feet in area. Such panels are free of objectionable sag, and are easy to handle because of the light weight and high impact strength of the material.

ADVANTAGES

maximum light transmission. Total transmission values as high as 90% are common with white translucent Plexiglas diffusers.

excellent diffusion. Light is spread evenly across the surfaces of the diffusers, with minimum brightness variation.

stability. Plexiglas does not yellow or undergo dimensional change during long exposure to fluorescent lamps. Its new appearance is maintained for many years.

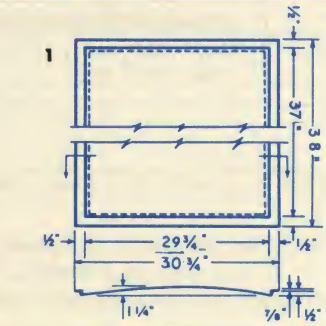
safety and ease of maintenance. Diffusers can be handled easily and safely because of the strength, light weight and resilience of Plexiglas.

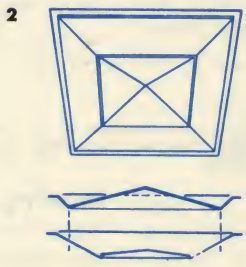
design freedom. Custom designed panels, for installations requiring relatively low numbers of panels, are practical because Plexiglas can be formed without high tooling costs.

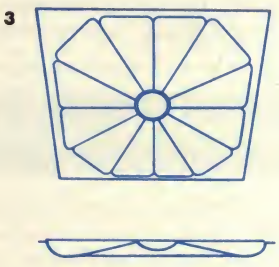
Surface-mounted fixtures, with 12" x 48" diffusing pans, are used at the Sinclair Refining Company offices in New York City.

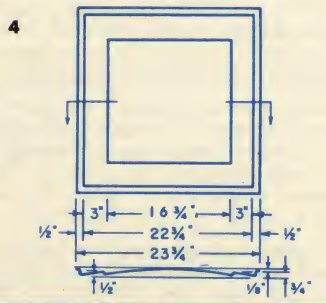
Recessed fixtures light a branch of the Detroit Bank in the Whitney Building, Detroit. Diffusers measure 48" x 48" and 24" x 48".

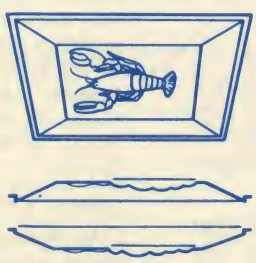
TYPICAL FORMED PLEXIGLAS DIFFUSER PANELS











material thickness vs. span

1. .080"/24" .100"/36" .125"/48" .125"/60"
2. .080"/24" .125"/36" .125"/48"
3. .125"/24"
4. .125"/30"
5. .100"/24" .125"/36" .125"/48"

MAXIMUM SPANS FOR PLEXIGLAS SHEETS

CORRUGATED

Type C-2-1/2 corrugated Plexiglas has an amplitude of 1″ and a frequency of 2- 1/2″. In lengths parallel to the corrugations, panels up to 48″ may be used. The only structural support needed for rigidity is across the edges perpendicular to the direction of corrugation.

Type C-1 corrugated Plexiglas has an amplitude of 3/8″ and a 1″ frequency. Panels up to 30″ in length parallel to the corrugations may be used. It is not practical to overlap corrugations with Type C-1, due to the narrow amplitude. Sheets should be supported on all four sides.

FLAT

Typical maximum lengths for flat sheets are 20″ in 3/16″ thickness and 24″ and 1/4″ thickness, with either two-side or four-side support. If flat panels are turned over after initial sag becomes apparent, panels supported on all four sides can be used up to 24″ x 36″ in 3/16″ thickness, and up to 36″ x 36″ in 1/4″ thickness.

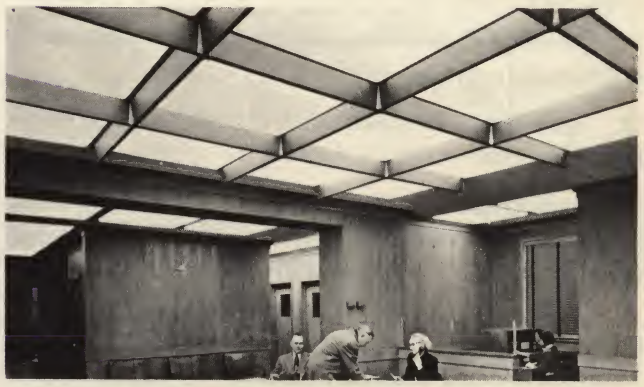
5009 FLAME-RESISTANT

All corrugated sheet span recommendations are reduced one-third when Plexiglas 5009 is used. Plexiglas 5009 flat sheet is not recommended for horizontal installation.

TRANSMISSION CHARACTERISTICS

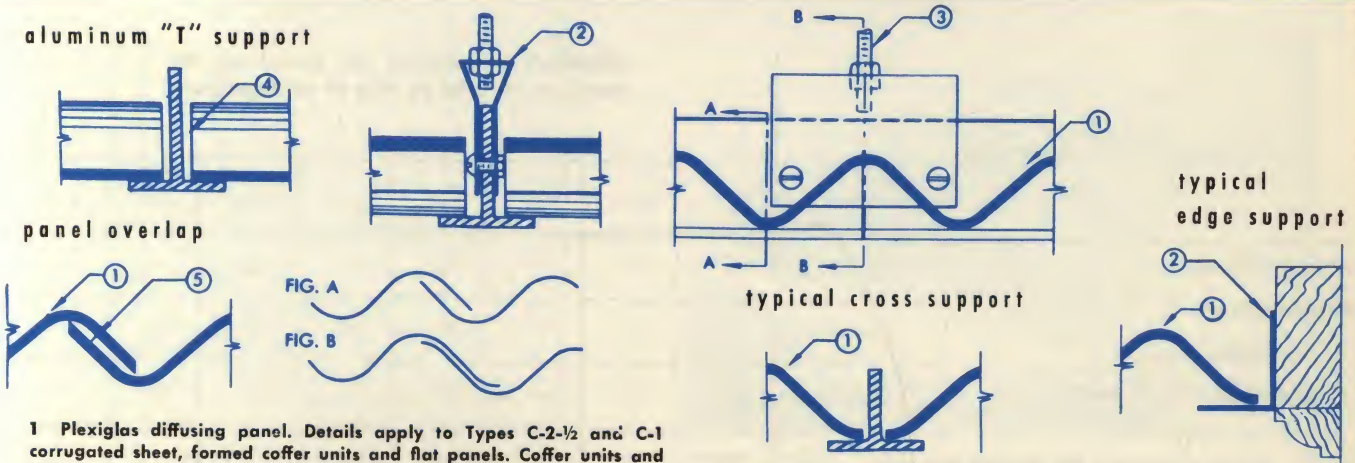
color	thickness	% luminous transmittance* (non-reflecting plenum)	% total transmittance (80% reflecting plenum)
W2067	.250″	47	85
W2159	.187″	48	85
W2447	.125″	47	85
	.080″	56	90

C.I.E. Illuminant C, indicative of north daylight



Modular lighting equipment, with formed 48″ x 48″ diffusing panels, at Thew Shovel Company offices, Lorain, Ohio.

LUMINOUS CEILING SUPPORT DETAILS



1 Plexiglas diffusing panel. Details apply to Types C-2-½ and C-1 corrugated sheet, formed coffer units and flat panels. Coffer units and C-2-½ corrugated sheets need support in only one direction.

2 Brake formed sheet metal: Aluminum, stainless or coated steel. Unistrut support (series P-6000) may also be used.

3 .187″ diameter hanger rods, 36″ to 48″ o.c. Where supports are installed in one direction only, hangers should be braced above Plexiglas to prevent side play.

4 Expansion clearance of 1/32″ per foot of panel dimension parallel to corrugation should be provided for a temperature rise of 50°F.

5 Where minimum shadow is desired Fig. A (open gap) is recommended for joints parallel to corrugations. This method also maintains the lapped panels in the same plane at the joints. Otherwise, panels may be lapped without ⅜″ edge trim as in Fig. B.

FORMED PLEXIGLAS

Plexiglas "formed windows" are sheets formed to corrugated, ribbed or domed shapes. They can be colorless, tinted, or translucent. Being formed, they gain in rigidity and architectural interest. Formed windows provide large areas of daylight admission, are free from the costly maintenance problems associated with small windows, and are simple to install. They offer the architect a new design medium in window glazing.

Large transparent sheets of corrugated Plexiglas form an uninterrupted expanse of glazing for transmission of high-frequency television signals.

ADVANTAGES

1. **low cost**—One piece construction with simple edge engagement cuts installation costs to a minimum.
2. **trouble-free**—Minimum framing and joints minimize weather problems.
3. **strength**—Plexiglas resists impact, twisting, vibration and shock.
4. **reduction of sky glare**—Tinted transparent colors reduce glare without loss of visibility. Translucent colors reduce glare and diffuse daylight.
5. **reduction of solar heat**—Transparent and translucent colors absorb and reflect solar heat, thereby help to keep a building cooler.

TOTAL SOLAR ENERGY TRANSMISSION AND VISIBLE LIGHT TRANSMISSION

type of material	% solar energy transmittance	% luminous transmittance*
Plexiglas colorless	59	92
Plexiglas #2064 neutral gray	44	27
Plexiglas #2069 blue tint	71	54
Plexiglas #2111 green tint	76	78
Plexiglas W-2447 white translucent, .187" thick	56	56
Plexiglas W-7328 white translucent, .187" thick	33	33

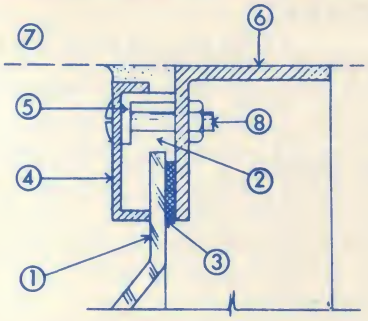
**C.I.E. Illuminant C, indicative of north daylight*

TYPICAL PLEXIGLAS THICKNESSES FOR SIDEWALL GLAZING IN RELATION TO PANEL SIZE

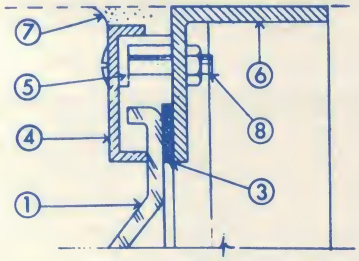
types of glazing		minimum dimension of panel or dimension parallel to ribs or corrugations							
		to 1′	1′-2′	2′-3′	3′-4′	4′-5′	5′-6′	6′-7′	7′-8′
corrugated sheets	depth 1″	1/16″	1/16″	1/8″	1/8″	1/8″	3/16″		
ribbed panels									
rib spacing no greater than three times rib depth	depth 2″	1/16″	1/16″	1/16″	1/16″	1/8″	1/8″	3/16″	
	depth 3″	1/16″	1/16″	1/16″	1/16″	1/8″	1/8″	1/8″	1/8″
domes	rise = 5% of minor dimension	1/16″	1/16″	1/8″	3/16″	3/16″			
	rise = 10% of minor dimension	1/16″	1/16″	1/8″	1/8″	3/16″	1/4″	5/16″	3/8″
flat sheets		1/16″	1/8″	3/16″	1/4″	1/4″	5/16″	3/8″	1/2″

GLAZING DETAILS

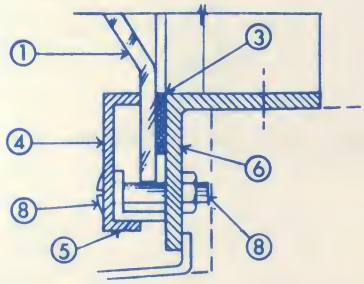
HEAD



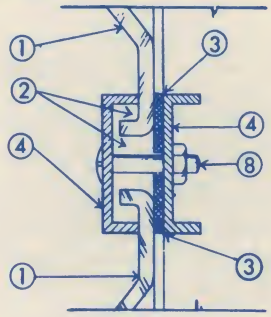
JAMB



SILL

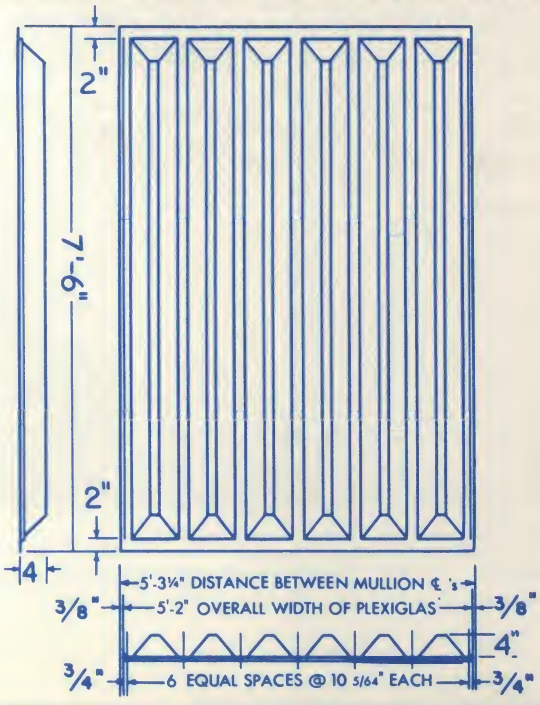


MULLION



1. Plexiglas glazing panel. (Thickness required depends on type and depth of forming. Panels should be minimum 1/8″ thick in sizes up to 48″ x 60″ and 3/16″ in larger sizes in designs suggested.)
2. Expansion and contraction clearance. (Provision for movement of panel should be based on coefficient .00004″ per inch per °F.—approximately 1/32″ expansion and contraction per ft.).
3. Keystone No. 162 Tape, Presstite Engineering Co., 39th & Chouteau, St. Louis 10, Missouri.
4. 1 3/4″ x 1/2″ x 1/8″ aluminum channel extrusion No. 8449, Aluminum Co. of America.
5. Aluminum angle spacer 1″ wide.
6. 2″ x 2″ x 3/16″ aluminum angle.
7. Caulking.
8. Aluminum oval-head 1/4″-20 bolt approx. 16″ o.c.

FORMED PANEL DETAILS AND TYPICAL INSTALLATION



Formed Plexiglas windows are used to glaze this modern building. The panels, formed to a V-rib corrugated design, are neutral gray transparent for glare reduction. They measure 48″ x 84″.

Because Plexiglas burns, its use as a glazing material is subject to building code limitations which are more restrictive than those applicable to plain glass.

Prefabricated skylight units with formed Plexiglas domes bring maximum flexibility to daylighting systems. They are available commercially in square and rectangular shapes, in sizes ranging from 20″ x 20″ to 60″ x 96″. They can also be purchased in circular shapes of various diameters. The units are made with colorless Plexiglas domes, for transparency, and with white translucent domes for greater diffusion of daylight.

Frequently, slightly domed Plexiglas panels are installed under skylight units, flush with the ceiling of a room. This provides additional thermal insulation, can conceal lighting fixtures in the skylight well, and integrates the skylighted area with the surrounding ceiling.

Plexiglas dome skylights offer many outstanding features for daylight admission into school, industrial plant, institutional and residential buildings.

ADVANTAGES

1. one-piece construction—The entire opening is covered by a single leak-proof dome. Troublesome joints, supports and sealing compounds are eliminated.

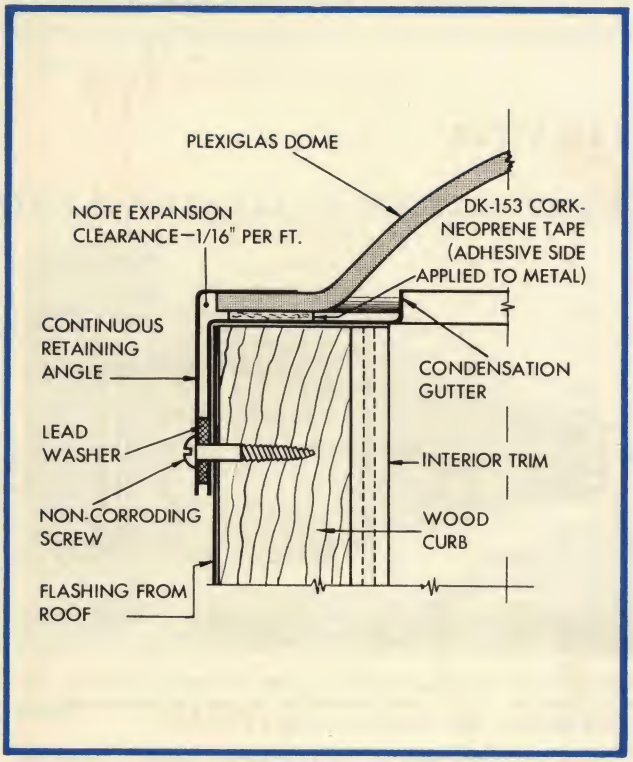
2. light weight—A complete skylight unit, including weatherproof framing for the dome, has an average weight of only two pounds per square foot. Architects have great freedom from structural limitations in the placement of skylights.

3. breakage resistance—The strength and resilience of Plexiglas, and the structural rigidity of the dome shape, provide safety overhead.

4. daylighting efficiency — White translucent Plexiglas transmits 60-75% of daylight, provides complete diffusion, and reduces solar heat. Clear Plexiglas provides 92% transmittance. Opaque supports across the roof opening are eliminated by the one-piece dome.

5. minimum maintenance — Dome shape promotes self-cleaning. Skylights with strong, durable domes of Plexiglas give long trouble-free service.

TYPICAL INSTALLATION DETAIL



TYPICAL INSTALLATION

Typical school installation of Plexiglas dome skylights. The one-piece domes provide maximum admission of daylight through roof openings in schools, industrial plants, institutions and homes.

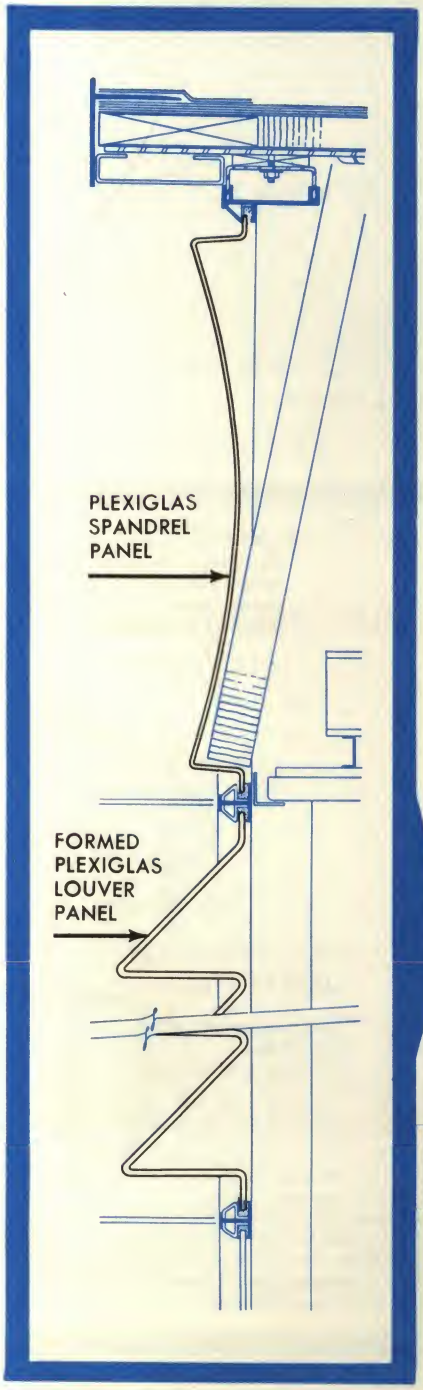
PLEXIGLAS SPANDREL PANELS

PLEXIGLAS SPANDREL PANELS

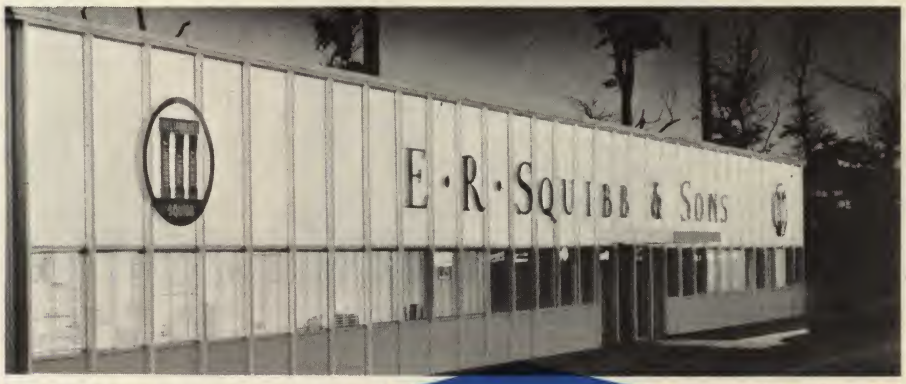
Spandrel panels formed from Plexiglas sheet offer the advantages of a wide selection of colors, shapes and surface textures. Individual panels can be as large as 60″ x 96″ in standard sizes and even larger custom sizes can be obtained. Translucent colored Plexiglas spandrels can be backlighted with fluorescent lamps to provide complete luminosity at night. The application of Plexiglas letters and trademark reproductions integrates company and building identification.

INSTALLATION

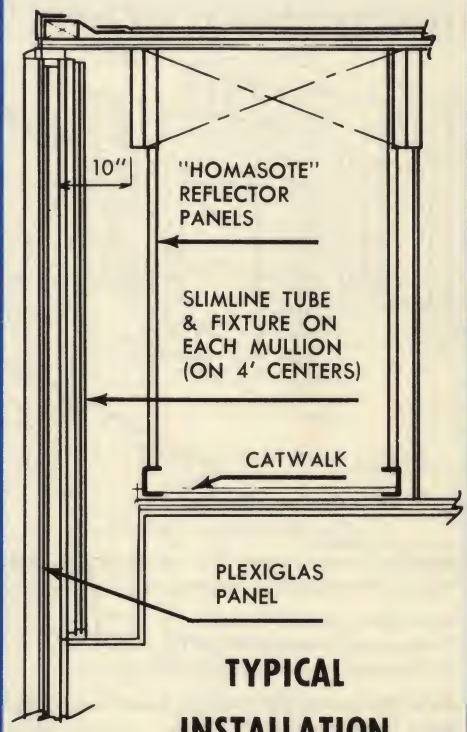
Spandrel panels can be installed in extruded aluminum frames typical of those used in curtain wall construction. Frames should provide adequate engagement of the panels after allowance for maximum thermal contraction and wind loading. The panels should be shorter in both dimensions than the frame opening, to allow for thermal expansion of the Plexiglas.



TYPICAL INSTALLATION 4′ x 8′ backlighted spandrels, letters and trademark reproductions give dramatic appearance to this building in Cleveland.



TYPICAL INSTALLATION
At this Rohm & Haas office-warehouse near Chicago, spandrels are combined with daylight louver panels.



TYPICAL INSTALLATION DETAIL

Signs made of Plexiglas are usually illuminated with neon or fluorescent tubes concealed behind the acrylic plastic. The light is diffused and spread evenly over the visible surface of the translucent material, resulting in complete luminosity of sign faces or letters.

ADVANTAGES

1. effective day and night—In daytime, Plexiglas signs have broad-stroke legibility, solid three-dimensional appearance, and full color value. At night, they glow brilliantly from interior lighting that is diffused over the entire visible surface.

2. design flexibility—Plexiglas is available in a wide range of colors, and can be formed to almost any shape. Complex trademarks and pictorials of products can be painted on Plexiglas. The size of a sign face is not limited. Letters are commercially available, or can be custom fabricated, in many styles.

3. architectural appeal—With Plexiglas, architects can design signs that have dignity, can be lighted spectacularly, and can be integrated with a building's appearance and the nature of a business.

4. weather resistant—Outdoor sign faces and letters of Plexiglas resist cracking, chipping, warping and dimensional change. A wide range of stable translucent outdoor colors is available.

5. low maintenance—The electrical components of a Plexiglas sign are enclosed, protected from weather and damage.

6. controlled brightness—Plexiglas signs attract attention by means of large luminous areas, lower in brightness than exposed light sources.

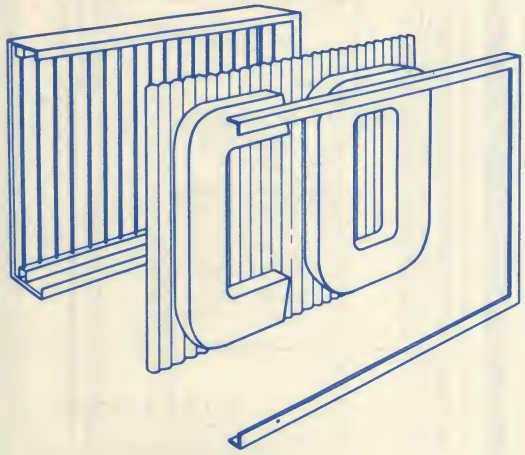
TYPES OF SIGNS

1. Signs made of flat, corrugated,or formed Plexiglas colored background panels on which Plexiglas letters are mounted.

2. Large architectural facades, pylons or spectaculars of flat, corrugated or formed Plexiglas, on which letters and other identification devices are mounted.

3. Interior-lighted three-dimensional letters, or metal channel letters with flat Plexiglas faces.

CORRUGATED PLEXIGLAS BOX SIGN

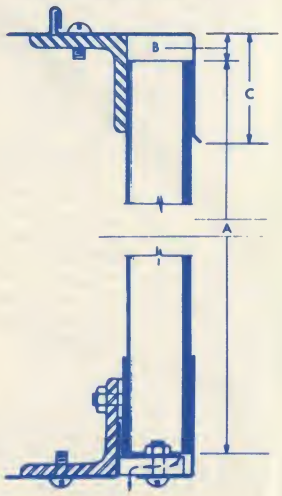


Provision must be made for expansion and contraction which occurs with changes in temperature.

A—Length of Plexiglas panel.
B—Expansion clearance—½ of 1% of A.
C—Minimum depth of channel—2% of A.

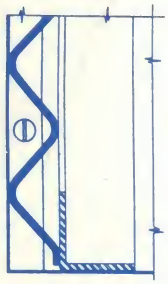
Note: Panels over 4 ft. in height should be hung by bolting at top every fourth corrugation through oversized holes using rubber grommets.

TOP AND BOTTOM DETAILS FREE STANDING CORRUGATED PANEL

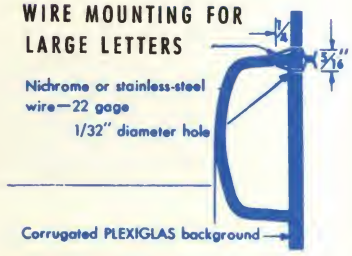


END DETAIL

Corrugated Plexiglas may be snugly held at sides with expansion taken up by bellows action of corrugations.



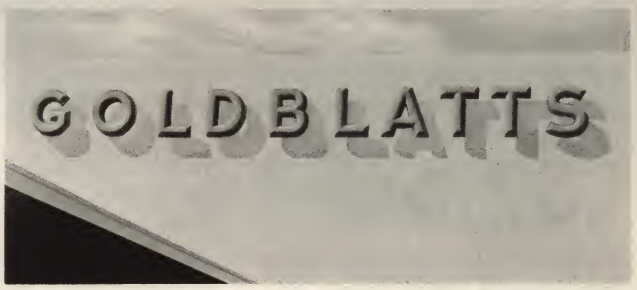
WIRE MOUNTING FOR LARGE LETTERS



Use #22 ga. nichrome or stainless steel wire. Maximum spacing of wire fasteners not to exceed 18" square. Letters four feet and over in width should be supported in center of letter, to peak of corrugation and valley of corrugation, at locations more than two feet from center, to allow for expansion.

TYPICAL INSTALLATIONS

This 185-foot sign, with Plexiglas panels and letters, identifies a bank in Temple, Texas. The corrugated background panels are 4′ x 6′; they are interior-lighted by 3000 feet of neon.



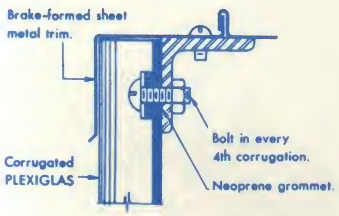
Formed Plexiglas letters are used on all sides of the Goldblatts department store in the Park Forest Shopping Center, Illinois. Letters are 4′ high , with 11″ strokes.

Interior-lighting gives complete luminosity to the Goldblatts letters at night. Letters are formed to a rounded-face design.

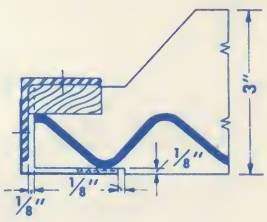
LARGE C—2½ CORRUGATED SHEET SIGNS

HANGING SINGLE CORRUGATED SHEETS BY BOLTING

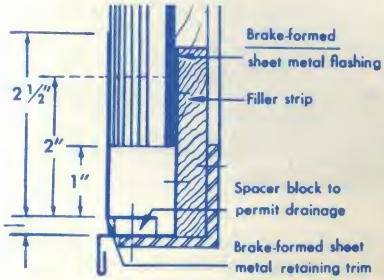
TOP



SIDE CHANNEL



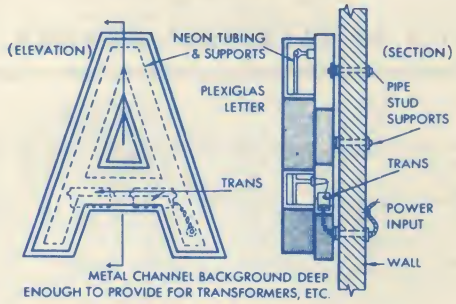
BOTTOM



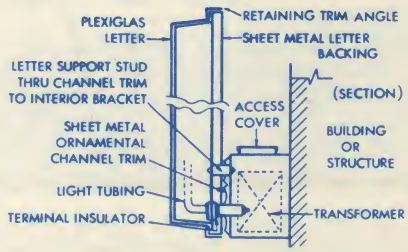
In general, corrugated sheets over six feet in height should be hung. Sheets are bolted in every fourth corrugation through over-sized holes using neoprene grommets.

LETTER MOUNTING AND WIRING DETAILS

STUD MOUNTED LETTER



ORNAMENTAL CHANNEL MOUNTED LETTER



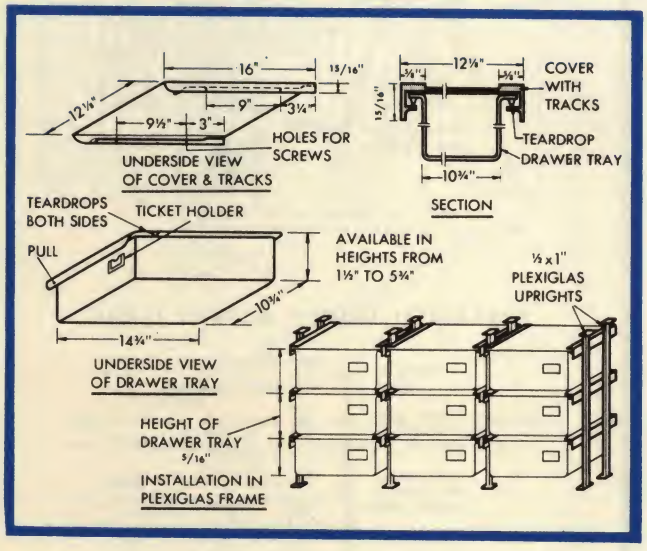
Many types of merchandise display fixtures, both standard and custom, are made of Plexiglas. These include millinery, shoe and jewelry trees, wall boxes, show cases, counter dividers, tiered shelves, rigid envelopes, and drawer trays. The names of display fixture manufacturers are available on request.

TYPICAL EXAMPLE

Transparent drawer trays illustrate the effectiveness of Plexiglas for merchandise display in department and variety stores.

This extensive installation of drawer trays in a large Eastern department store shows the "open display" effect achieved through the use of transparent Plexiglas drawers, covers, and framing.

DETAILS OF PLEXIGLAS DRAWER TRAYS



Plexiglas drawer trays can be installed as modular units in prefabricated Plexiglas frames or in simple wood cabinets made by local woodworking or store maintenance shops. Existing fixtures can be converted to accommodate Plexiglas drawer trays without difficulty.

ADVANTAGES

The sparkle and clarity of colorless transparent Plexiglas make it a beautiful yet unobtrusive setting for all types of merchandise.

The ease with which Plexiglas can be fabricated, with freedom from finishing operations, makes it possible to meet custom requirements quickly.

Fixtures are safe and easy to handle because Plexiglas resists breakage and is light in weight.

The versatility of the plastic as a design medium makes it adaptable to the merchandising and architectural plan of almost any retail store.

ADVANTAGES OF PLEXIGLAS DRAWERS

1. Customers can see and select merchandise easily.
2. Stocks are visible, easier to keep in order.
3. Merchandise has heightened visual appeal.
4. The quality appearance of Plexiglas adds an attractive note to general store decor.
5. Operating costs are reduced, through increased speed of sales and efficient inventory control.

This island display for pound stationery at The Hecht Company store in Arlington, Va., has Plexiglas storage dividers, counter tops, and transparent boxes that greatly facilitate customer self-service.

DIRECTIONAL AND DEPARTMENTAL SIGNS

Plexiglas signs are used inside retail establishments because of their durability; legibility; the variety of lighted effects that can be achieved; and their excellent appearance, particularly where rich styling is desired. Directional and departmental signs of Plexiglas can be:

1. Clear panels with carved letters, edge-lighted or non-lighted. This type of sign, being essentially transparent, commands attention while maintaining the open effect of a store layout.

2. Fluorescent-colored panels with carved letters. This type of a sign is, in effect, self-illuminated.

3. Back-lighted or non-lighted translucent colored panels with applied letters, symbols and insignias.

TYPICAL INSTALLATIONS

This departmental sign has colored letters applied to white panels for excellent legibility. The panels are flat behind "Shops," are formed to a ripple design behind "Downstairs."

A clear panel, formed to a drape design, is decorated in fabric patterns to make this distinctive sign. All installations shown are at Ellis Stone & Company, Greensboro, No. Carolina.

A colored panel, formed and decorated to simulate a towel, is an effective wall sign. The store signature is reproduced on a white disc.

A transparent sign, formed to a scroll shape, is used as a free-standing marker on a counter top. The legend is painted on the back surface.

PLEXIGLAS SERVICES AND PUBLICATIONS

ARCHITECTURAL SERVICES

Technically trained field representatives will be glad to assist architects in the selection of the proper type of Plexiglas for specific applications, advise on problems of design and installation, and suggest sources of supply for standard building products and custom fabrication.

The services of Rohm & Haas Company field representatives are augmented by the staff of a design and fabrication laboratory where new applications for Plexiglas and new techniques in its fabrication and installation are studied and developed.

PUBLICATIONS FOR THE ARCHITECT

The following brochures and bulletins, indicated by title and code number, are available on request:

- Design and Fabrication Data (PL-28)
- Architectural Lighting with Plexiglas (PL-202)
- Outdoor Lighting with Plexiglas (PL-242)
- Daylight Control with Louver Panels of Plexiglas (PL-226)
- Plexiglas Dome Skylights (PL-301)
- Plexiglas for Replacement Glazing (PL-251)
- Plexiglas for Architectural Signs (PL-306)
- Plexiglas for Signs (PL-287)
- Plexiglas in Architecture (PL-362)

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IN CANADA:
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